

# Curriculum Vitae

Summarized biography, Scientific publications and activities

Spring 2018

## **Professor Dr. Agnar Aamodt**

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## Summary CV

Dr. Agnar Aamodt is Professor of Computer Science and Artificial Intelligence at the Norwegian University of Science and Technology (NTNU), Department of Computer Science, located in Trondheim Norway. He is member of the Data and Artificial Intelligence Group. He served as group leader for the AI Group before its merge into the current group. He was Deputy Head of Department for Research from 2013 to 2017.

Born in 1950, Agnar Aamodt received his Master Degree from NTH (now NTNU) in 1975 within the field of Electrical Engineering with a specialization in Biomedical Engineering. He worked as a Research Librarian in the NTH University Library until 1978, after which he joined SINTEF and the national library automation project BIBSYS. In 1982 he participated in building up the Knowledge-Based Systems group at SINTEF. He was employed by SINTEF until 1991, when he joined the University of Trondheim (now NTNU).

Dr. Aamodt has worked full time in the area of computer science and artificial intelligence (AI) since 1983. In 1991 he completed his doctoral dissertation, in which a framework and system for knowledge-intensive case-based reasoning and learning (Creek) was developed. He was appointed Professor in the fall of 1994 (Full Professor). This is the position he has held since then, with the exception of one year (2007-2008), when he was employed by the start-up company Verdande Technology AS, which he co-founded as a spin-off company from his research group.

Professor Aamodt's research focus is within knowledge-based methods for computerized support to human problem solving and learning, with a focus on combining generalized knowledge with individual experiences. The main method area is case-based reasoning, and his particular line of study is the integration of such methods with other types of reasoning and learning (e.g. model-based methods, rule-based methods, statistical methods, bio-inspired methods). These methods have been and are applied to problems of decision support in complex domains such as bio-medicine (cardiology diagnosis, CT image interpretation, functional genomics), petroleum engineering (preventing unwanted events during drilling, improved well planning), aquaculture (improved fish farming operations), and traffic/transportation systems (improved traffic flow through intersections), but also for game playing, computer-assisted learning, and knowledge management. Driven by the main goal of improved support for human decision making and learning, the computational methods also borrow from improved understanding of human reasoning and problem solving, which positions some of his work within the wider field of Cognitive Science.

In his research Professor Aamodt co-operates with national and international universities and institutions. In the academic year 1987-88 he was a visiting scholar in the University of Texas at Austin, Department of Computer Science, AI Laboratory. In the year 1991-1992 he was employed by the Artificial Intelligence Laboratory, Free University of Brussels, and he spent the year 2001-2002 as a visiting professor in the Institute of Artificial Intelligence of the Spanish Research Council (IIIA/CSIC) in Barcelona. He spent the fall semester 2012 visiting at the University of Auckland, the spring semester 2013 at Université Claude Bernard in Lyon, the fall semester 2017 at Robert Gordon University in Aberdeen, and the spring 2018 in Università del Piemonte Orientale in Alessandria. Shorter periods as invited guest professor has been spent in the University

of Kaiserslautern, the University of Freiburg, the University of Leipzig, the University of Sao Paulo, the University of Ulster, and the University of Girona.

He has been involved in several research projects on methods for developing knowledge-based systems, as well as on application systems development. This also includes earlier international projects funded by the European organizations ESA (the Knowit project on knowledge-based information retrieval), Eureka (the Galeno project on medical decision support), and Esprit (the Acknowledge and KADS-II projects on knowledge acquisition and modelling tools). EU funded projects include the Noemie project (EU, FW4) on case-based reasoning and data mining applied to the capturing and reuse of experience in the oil industry, in which he was Technical Leader for the Sintef/NTNU team. He led the NTNU team in the AmbieSense project (EU, FW5) on agent-based intelligent mobile services, and the Norwegian team in the EU Cost 282 action on knowledge exploration in science and technology. He was a partner in the EU FW6 project EPCRC (European Palliative Care Research Collaborative), a RTD-STREP project aimed at improved assessment and treatment of pain and other side effects of cancer (finished in 2010), and in TLCPC, a project addressing related issues funded by the Norwegian Research Council. Another NFR project, RTDA (2006-2008) on optimizing oil drilling processes, was run within the spin-off company Verdande Technology, of which he was a founder. He worked in Create, an NFR SFI project run by Sintef Aquaculture and Fisheries that aims to develop data analysis and decision support methods in fish farming, and he is leading the the NTNU-IDI team in the follow-up SFI EXPOSED (2015-2022). He is IDI's PI in the EU project selfBACK (2016-2020) on data analysis and experience-based advice to patients with low back pain. He has recently been active in establishing the Telenor-NTNU AI-Lab, funded by Telenor to promote high quality research in AI and machine learning.

Dr. Aamodt has published approx. 100 scientific papers in international journals, books, and conferences. He has 3 patents. He has edited several conference proceedings and produced a number of project reports. He has been a reviewer of many EU projects and proposals, and has served as member of several national and international doctorate committees, including committees for Swedish, British, French, German, Spanish, and Indian doctorates. He has served on a number of evaluation committees for national and foreign professorship positions. He was Head of the Norwegian National Committee for Appointment to Professorship on Personal Merits in Computer Science, from 2002-2010.

## Personal information summarized

Name: Agnar Aamodt

Sex: Male

Born: 19.06.1950

Nationality: Norwegian

Present position: Professor of Computer Science with specialization in Artificial Intelligence

Address: Department of Computer Science (IDI), Faculty of Information Technology and Electrical Engineering, Norwegian University of Science and Technology (NTNU), Trondheim.

Email: [agnar@ntnu.no](mailto:agnar@ntnu.no)

### Academic Degrees

1975 MSc (siv.ing.) in Electrical Engineering, specialization in Biomedical Engineering, NTNU

1991 PhD (dr.ing.) in Computer Science, specialization in Artificial Intelligence, NTNU

### Work Experience

#### *Full time employment:*

1975 – 1977 Documentalist and Research Librarian at NTNU University Library, Trondheim

1977 – 1979 Educational scholarship at Norwegian Document Data, Oslo

1979 – 1991 Research Scientist at SINTEF Information and Communication Technology, Trondheim

1991 – 1992 Research Scientist at Vrije Universiteit Brussels, AI Laboratory, Brussels

1992 – 1994 Professoral scholarship at NTNU, Department of Computer and Information Science

1994 – 2007 Professor at NTNU, Department of Computer and Information Science  
- Head of Intelligence Systems Group (1999 – 2013)

2007 – 2008 Senior Developer at Verdande Technology AS, Trondheim

2008 – pres. Professor at NTNU, Department of Computer and Information Science  
- Deputy Head of Department for Research (2013 – 2016)  
- Head of Departmental Research Committee (2016-2017)

#### *Part time employment:*

1996 – 2002 Scientific Advisor at SINTEF Information and Communication Technology, Trondheim

2007 – 2008 Adjunct Professor at NTNU, Department of Computer and Information Science

2008 – 2014 Senior Consultant at Verdande Technology AS, Trondheim

2009 – 2016 Scientific Advisor at SINTEF Fisheries and Aquaculture, Trondheim

### Student Supervision

**PhD:** 7 PhDs as main supervisor - currently main supervisor for 3 PhD candidates

**MSc:** 57 MSc students as main supervisor

## **Research projects with leading roles**

- 1997 - 1999 NOEMIE, Experience reuse in oil drilling. EU FW4. Techn. Manager for NTNU/SINTEF
- 2002 – 2004 AmbieSense, Agent-based intelligent mobile services. EU FW5. PI for NTNU
- 2006 – 2008 RTDA, Real Time Drilling Analysis, NFR/Petromaks, Project leader
- 2007 – 2010 EPCRC, European Research Collaborative in Palliative Care. EU FW6. NTNU-IDI responsible
- 2008 – 2011 TPCLC, NFR FUGE, Translational Res. in Lung Cancer and Palliative Care. NTNU-IDI responsible
- 2015 – 2021 EXPOSED, Aquaculture operations under exposed conditions. NFR/SFI. NTNU-IDI responsible
- 2016 – 2020 selfBACK, Self-management of low back pain. EU Horizon 2020. PI for NTNU-IDI.

## **Service to the international community**

- 1998- Editorial Board, International Journal of Computational Intelligence and Applications
- 2011- Editorial Board, International Journal of Intelligence Science
- 2015- Editorial Board, International Journal of Collaborative Intelligence
- 1985- Reviewer for many journals, including top-level journal (Artificial Intelligence,
- 1995 Programme Co-Chair of 1st International Conference on Case-Based Reasoning
- 2003 Conference Chair of 5th International Conference on Case-Based Reasoning
- 1994- Reviewer in a number of EU projects, evaluator of a number of EU and other international project proposals
- 1985- Program Committee member of more than 80 conferences and workshops, including top conferences (IJCAI, ECAI)

## **Evaluation committees**

- 1994- Member of 19 PhD and Habilitation evaluation committees at universities in 7 countries
- 1996- Member of 10 evaluation committees for national and foreign professorship positions
- 2002-10 Head of the Norwegian National Committee for Appointment to Professorship on Personal Merits in Computer Science

## **International collaboration**

- 1986- Professional network with a range of universities in Europe, US, Brazil, India, China, New Zealand
- 1994- Member of PhD and Habilitation evaluation committees at universities in 7 countries
- 1987- Longer stays (several months) at universities in Austin, Brussels, Barcelona, Auckland, Lyon, Aberdeen, Alessandria

# Publication List

(each section in reverse chronological order)

## Research Papers in Refereed Journals, Peer-Reviewed Conferences and Workshops

### *Publication years:*

#### **2015 – 2019**

Susan Crow, Agnar Aamodt: Case based reasoning as a model for cognitive artificial intelligence. Case-Based Reasoning Research and Development, 26th International Conference on Case-Based Reasoning, ICCBR 2018 Stockholm, Sweden, July 10-12, 2018. Lecture Notes in Artificial Intelligence, 2018, ISBN 978-3-030-01081-2, pp.88-103.

Hoda Nikpour, Agnar Aamodt, Kerstin Bach: Bayesian-Supported Retrieval in BNCreek: A Knowledge-Intensive Case-Based Reasoning System. Case-Based Reasoning Research and Development, 26th International Conference on Case-Based Reasoning, ICCBR 2018 Stockholm, Sweden, July 10-12, 2018. Lecture Notes in Artificial Intelligence, 2018, ISBN 978-3-030-01081-2, pp.422-437.

Tor Gunnar Houeland, Agnar Aamodt: A Learning System based on Lazy Metareasoning. *Progress in Artificial Intelligence*, 2017, ISSN(online) 2192-6360 (print) 2192-6352. Springer, 2017 (online), print versjon: June 2018, Volume 7, Issue 2, pp 129–146.

Hoda Nikpour, Agnar Aamodt: Bayesian Analysis in a Knowledge-Intensive CBR System. Miltos Petridis (ed): 22nd UK Symposium on Case-Based Reasoning, Cambridge, UK, December 2017. pp 28-40.

Bjørn Magnus Mathisen, Agnar Aamodt, Helge Langseth: Data driven case base construction for prediction of success of marine operations. In Ruiz-Granados and Kofod-Petersen (Editors), Twenty-Fifth International Conference on Case-Based Reasoning (ICCBR 2017), Workshop Proceedings, Ceur-ws.org, (link at <http://www.iccbr.org/iccbr17/workshops.html>), pp. 102-111.

Tale Prestmo, Kerstin Bach, Agnar Aamodt, Paul Jarle Mork: Evolutionary Inspired Adaptation of Exercise Plans for Increasing Solution Variety. ICCBR 2017, Trondheim. Lecture Notes in Computer Science, LNCS, Volume 10339, pp. 272-286.

Kari Fosshaug Skjold, Marthe Sofie Øynes, Kerstin Bach, Agnar Aamodt: IntelliMeal – Enhancing Creativity by Reusing Domain Knowledge in the Adaptation Process. Workshop Computer Cooking Contest, ICCBR 2017, 2017-06-26.

Paal Skalle, Agnar Aamodt, Isak Swahn: Detection of failures and interpretation of causes during drilling operations. ADIPEC, Abu Dhabi, Nov. 2016. SPE-183 022-MS.

Kerstin Bach, Tomasz Szymon Szczepanski, Agnar Aamodt, Odd Erik Gundersen, Paul Jarle Mork: Case Representation and Similarity Assessment in the SELFBACK Decision Support System. ICCBR 2016. Lecture Notes in Computer Science 2016; Volume 9969, pp. 32-46.

Hoda Nikpour, Agnar Aamodt, Paal Skalle: Diagnosing Root Causes and Generating Graphical Explanations by Integrating Temporal Causal Reasoning and CBR. In: Coman and Kapetanakis: Twenty-fourth International Conference on Case-Based Reasoning (ICCBR 2016), Workshops Proceedings. CEUR Workshops Proceedings Vol.1815, ISSN 1613-0073, pp. 162-172.

Gleb Sizov; Pinar Øzturk, Agnar Aamodt: Evidence-driven retrieval in textual CBR: Bridging the gap between retrieval and reuse. ICCBR 2015. Lecture Notes in Computer Science 2015; Volum 9343. pp. 351-365.

### **2010 – 2014**

Anders Kofod-Petersen, Ole Johan Andersen, Agnar Aamodt: Case-based reasoning for improving traffic flow in urban intersections. *Lecture Notes in Computer Science*, Volume 8765. Springer, 2014. p. 215-229.

Pinar Øzturk, Hector Munoz-Avila, Agnar Aamodt: Explanation of opportunities. The 22nd International Conference on Case-Based Reasoning (ICCBR 2014), Workshop Proceedings. Cork, Ireland, 2014 p. 4-16.

Pål Skalle, Agnar Aamodt, Karin Laumann: Integrating human related errors with technical errors to determine causes behind offshore accidents. *Safety Science*, Volume 63, March 2014, p. 179-190.

Samad Valipour Shokouhi, Pål Skalle, Agnar Aamodt: An overview of case-based reasoning applications in drilling engineering. *Artificial Intelligence Review*; Volume 41 (3), March 2014, p. 317-329.

Pål Skalle, Agnar Aamodt, Odd Erik Gundersen: Detection of Symptoms for Revealing Causes Leading to Drilling Failures. *SPE Drilling & Completion*; Volume 28.(2), 2013 p. 182-193.

Pål Skalle, Agnar Aamodt, Odd Erik Gundersen: Experience Transfer for Process Improvement. *Engineering Applications of Artificial Intelligence*; Volume 26.(9), 2013. p. 2206-2214.

Odd Erik Gundersen, Frode Sørmo, Agnar Aamodt, Pål Skalle: A real-time decision support system for high cost oil-well drilling operations. *AI Magazine*, Volume 34, Number 1, Spring 2013. ISSN-0738-4602. pp 21-32. (Slightly extended/modified version of IAAI-2012 paper.)

Odd Erik Gundersen, Frode Sørmo, Agnar Aamodt, Pål Skalle: A real-time decision support system for high cost oil-well drilling operations. Proceedings of The Twenty-Third Innovative Applications of Artificial Intelligence Conference (IAAI) 2012. AAAI Press, 2012. pp 2209-2216. (Slightly extended/modified version published in AI Magazine, as referenced above.)

Axel Tidemann, Finn Olav Bjørnson, Agnar Aamodt: Operational support in fish farming through case-based reasoning. Proceedings of The 25th International Conference on Industrial, Engineering & other Applications of Applied Intelligent Systems. Dalian, China, June 9-12 2012. Lecture Notes in Artificial Intelligence, LNCS, Springer, 2012. pp 104-113.

Tore Bruland, Agnar Aamodt, Helge Langseth: A hybrid CBR and BN architecture refined through data analysis. *Proceedings of ISDA-11, 11th International Conference on Intelligent*

*Systems Design and Applications*, Cordoba, Nov. 22-24, 2011. IEEE 2011. ISSN: 2164-7143  
ISBN: 978-1-4577-1676-8. p. 906-913.

Axel Tidemann, Finn Olav Bjørnson, Agnar Aamodt: Case-Based Reasoning in a System Architecture for Intelligent Fish Farming. Proceedings of The 11th Scandinavian Conference on Artificial Intelligence (SCAI 2011), Trondheim, Norway May 24th - 26th, 2011. 10 pgs. IOS Press.

Tor Gunnar Houeland, Agnar Aamodt: An Efficient Hybrid Classification Algorithm - an Example from Palliative Care. The 6th International Conference on Hybrid Artificial Intelligence Systems (HAIS '11), Wroclaw, Poland, May 23-25, 2011. 8 pgs. Springer Lecture Notes in Computer Science.

Pål Skalle, Agnar Aamodt, Odd Erik Gundersen: Transfer of experience for improved oil well drilling. In R. Sundaravadivelu, SP. Subramanian, and R. Sharma (eds): Proceedings of the First International Conference on Drilling Technology(ICDT - 2010) and National Workshop on Manpower Development in Petroleum Engineering (NWMDPE - 2010), November 18-21, Chennai, India. Indian Institute of Technology Madras, ISBN: 978-93-80689-03-6. pp 249-257.

Tore Bruland, Agnar Aamodt, Helge Langseth: Architectures integrating case-based reasoning and Bayesian networks for clinical decision support. Proceedings of IIP2010 - 6th International Conference on Intelligent Information Processing. *IFIP Conference Series*. Manchester, UK, October 13-16 2010. Springer Verlag, 2010. pp 82-91.

Samad Valipour Shokouhi, Agnar Aamodt, Pål Skalle: Applications of CBR in oil well drilling. Proceedings of IIP2010 - 6th International Conference on Intelligent Information Processing. *IFIP Conference Series*. Manchester, UK, October 13-16 2010. Springer Verlag, 2010. pp 102-111.

Agnar Aamodt, Odd Erik Gundersen, Jon Håvard Loge, Elisabeth Wasteson, Tomasz Szczechanski: Case-based reasoning for assessment and diagnosis of depression in palliative care. Proceedings of CBMS 2010 - The 23RD IEEE International Symposium on Computer-Based Medical Systems. Perth, Australia, October 12-15 2010. IEEE Symposium Series, 2010. p. 480-485.

Tor Gunnar Houeland, Agnar Aamodt: The utility problem for lazy learners - towards a non-eager approach. Proceedings of the 9th International Conference on Case-Based Reasoning, ICCBR 2010, Alessandria, Italy, July 2010. Lecture Notes in Artificial Intelligence 6176, Springer Verlag, ISSN-0302-9743, 2010. pp. 141-155.

Anders Kofod-Petersen, Helge Langseth, Agnar Aamodt: Explanations in Bayesian networks using provenance through case-based reasoning. 18th International Conference on Case-Based Reasoning, ICCBR 2010, Alessandria, Italy, July 2010. Workshop Proceedings. School of Electrical Engineering, Ohio University, 2010. pp. 79-86.

Samad Valipour Shokouhi, Agnar Aamodt, Pål Skalle: A semi-automatic method for case acquisition in CBR; A study in oil well drilling. Proceedings of IASTED International Conference on Artificial Intelligence and Applications (AIA-2010), Innsbruck, February 15-17 2010. ACTA Press, 2010. pp 263-270.

**2005 – 2009**



Samad Valipour Shokouhi, Agnar Aamodt, Pål Skalle: Comparing two types of knowledge-intensive CBR for optimized oil well drilling . Proceedings of the 4th Indian International Conference on Artificial Intelligence (IICAI-09), Tumkur India, December 16-18, 2009. IICAI 2009. pp. 722-737.

Samad Valipour Shokouhi, Pål Skalle, Agnar Aamodt, Frode Sørmo: Integration of real-time data and past experiences for reducing operational problems. Proceedings of International Petroleum Technology Conference (IPTC 2009), Qatar, December 7-9, 2009. SPE 2009. pp.

Tor Gunnar Houeland, Agnar Aamodt: An introspective component-based approach for meta-level reasoning in clinical decision-support systems. Proceedings of the First Norwegian Artificial Intelligence Symposium (NAIS'09), Trondheim, November 26-28 2009. Tapir Forlag, pp. 121-132.

Agnar Aamodt: Integrated Reasoning Systems - A Knowledge-Level Perspective with a Case Based Bias. Proceedings of the First Norwegian Artificial Intelligence Symposium (NAIS'09), Trondheim, November 26-28 2009. Tapir Forlag, pp. 143-153.

Anders Kofod-Petersen, Agnar Aamodt: Case-based Reasoning for Situation-aware Ambient Intelligence: A Hospital Ward Evaluation Study. Proceedings of the 8th International Conference on Case-Based Reasoning, ICCBR 2009, Seattle, July 2009. Lecture Notes in Artificial Intelligence 5650, Springer Verlag, ISSN-0302-9743. s. 450-464.

Samad Valipour Shokouhi, Agnar Aamodt, Pål Skalle and Frode Sørmo: Determining root causes of drilling problems by combining cases and general knowledge. Proceedings of the 8th International Conference on Case-Based Reasoning, ICCBR 2009, Seattle, July 2009. Lecture Notes in Artificial Intelligence 5650, Springer Verlag, ISSN-0302-9743. s. 509-523.

Tor Gunnar Houeland, Agnar Aamodt: Towards an Introspective Architecture for Meta-level Reasoning in Clinical Decision Support Systems. Proceedings of the Workshop on CBR in the Health Sciences, 8th International Conference on Case-Based Reasoning, ICCBR 2009, Seattle, July 2009. pp. 235-244.

Tomasz Szczepanski, Agnar Aamodt: Case-based Reasoning for Improved Micromanagement in Real-Time Strategy Games. Proceedings of the Workshop on Case-Based Reasoning for Computer Games, 8th International Conference on Case-Based Reasoning, ICCBR 2009, Seattle, July 2009. pp. 139-148.

Anders Kofod-Petersen, Jörg Cassens, Agnar Aamodt: Explanatory Capabilities in the CREEK Knowledge-Intensive Case-Based Reasoner. Proceedings of the 10th Scandinavian Conference on Artificial Intelligence (SCAI 2008). IOS Press, 2008.

Agnar Aamodt: Case-based reasoning for advice-giving in a data-intensive environment. Proceedings of the 10th Scandinavian Conference on Artificial Intelligence (SCAI 2008). IOS Press, 2008.

Anders Kofod-Petersen, Agnar Aamodt: Contextualised ambient intelligence through case-based reasoning. Proceedings of the 8th European Conference on Case-Based Reasoning, ECCBR

2006, Ölüdeniz/Fethiye, Turkey, September 4th-7th, 2006. Lecture Notes in Computer Science, Springer Verlag.

Mingyang Gu, Agnar Aamodt: Evaluating CBR systems using different data sources: a case study. Proceedings of the 8th European Conference on Case-Based Reasoning, ECCBR 2006, Ölüdeniz/Fethiye, Turkey, September 4th-7th, 2006. Lecture Notes in Computer Science, Springer Verlag.

Mingyang Gu, Agnar Aamodt: Dialog Learning in Conversational CBR. *Proceedings of the 19th International FLAIRS Conference* (Florida Artificial Intelligence Research Society), Melbourne Beach, Florida, May 11-13, 2006, AAAI Press. pp 358-363.

Frode Sørmo, Jörg Cassens, Agnar Aamodt: Explanation in Case-Based Reasoning; Perspectives and Goals. *Artificial Intelligence Review*. Vol. 24, no. 2, October 2005. Kluwer Academics Publisher. pp. 109–143.

Michael M. Richter, Agnar Aamodt: Case-based reasoning foundations . *Knowledge Engineering Review*, Vol. 20, Issue 03, September 2005. Cambridge University Press. pp 203-207.

Ramon López de Mántaras, David McSherry, Derek Bridge, David Leake, Barry Smyth, Susan Craw, Boi Faltings, Mary Lou Maher, Michael Cox, Kenneth Forbus, Mark Keane, Agnar Aamodt, Ian Watson: Retrieval, reuse, revision, and retention in case-based reasoning. *Knowledge Engineering Review*, Vol. 20, Issue 03, September 2005. Cambridge University Press. pp 215-240.

Cindy Marling, Edwina Rissland and Agnar Aamodt: Integrations with case-based reasoning. *Knowledge Engineering Review*, Vol. 20, Issue 03, September 2005. Cambridge University Press. pp 241-245.

Waclaw Kusnierczyk, Agnar Aamodt, Astrid Lægreid: Knowledge-intensive case-based support for automated explanation of biological phenomena. In: *6<sup>th</sup> International Conference on Case-Based Reasoning, Workshop Proceedings*. Chicago, Aug 23-26, 2005. DePaul University, Chicago, 2005. pp. 62-71.

Mingyang Gu, Agnar Aamodt: A knowledge-intensive method for conversational CBR. In: Héctor Muñoz Avila, Francesco Ricci (eds.), *Case-Based Reasoning Research and Development, 6<sup>th</sup> International Conference on Case-Based Reasoning, Proceedings*. Chicago, Aug 23-26, 2005. Lecture Notes in Artificial Intelligence 3620, Springer Verlag 2005, pp. 296-311. ISSN 0302-9743.

Agnar Aamodt: Case-based reasoning and intelligent tutoring. In Funk, P., Rognvaldsson, T., Xiong, N.(eds.): *SAIS-SSLS Proceedings*. Västerås, Sweden, April 20-22, 2005. Mälardalen Högskola, Västerås, 2005. pp. 8-22.

**2000 – 2004**

Mingyang Gu, Agnar Aamodt, Xin Tong: Component retrieval using conversational case-based reasoning. Zhongzhi Shi (ed.), *Proceedings of the ICIIP 2004, International Conference on Intelligent Information Systems*. Beijing, China, October 21 - 23, 2004. pgs. 259-272. ISBN0302-9743.

Pål Skalle, Agnar Aamodt: Knowledge-based decision support in oil well drilling. Zhongzhi Shi (ed.), *Proceedings of the ICIIP 2004, International Conference on Intelligent Information Systems*. Beijing, China, October 21 - 23, 2004. pgs. 443-455. ISBN0302-9743.

Agnar Aamodt: Knowledge-intensive case-based reasoning in Creek. Peter Funk, Pedro A. Gonzalez Calero (eds.), *Advances in case-based reasoning, 7th European Conference, ECCBR 2004, Proceedings*. Madrid, Spain, August/September 2004. Lecture Notes in Artificial Intelligence, LNAI 3155, Springer, 2004. pgs. 1-15. ISBN0302-9743.

Mingyang Gu, Agnar Aamodt: Explanation-boosted question selection in conversational CBR. Pablo Gervas and Kalyan Moy Gupta (eds.), *Proceedings of the ECCBR 2004 Workshops, 7th European Conference on Case-Based Reasoning*. Madrid, Spain, 30th August - 2nd September 2004. Technocal Report 142-04, Universidad Complutense de Madrid, Departamento de Sistemas Informaticos y Programacion, Madrid, 2004. pgs. 105-114. ISBN 84-89456-36-4

Anders Kofod-Petersen, Agnar Aamodt  
Case-based situation assessment in a mobile context-aware system. *Proceedings of AIMS2003, Artificial Intelligence for Mobil Systems*, Seattle, October, 2003.

Martha Dørum Jære, Agnar Aamodt, Pål Skalle  
Representing temporal knowledge for case-based prediction. To appear in Susan Craw (ed.): *Proceedings of ECCBR-2002, 6th European Conference on Case-Based Reasoning*, Aberdeen, September 4-7, 2002. Lecture Notes in Artificial Intelligence, Springer Verlag, 2002.

Frode Sørmo, Agnar Aamodt: Knowledge communication and CBR. 6th European Conference on Case-Based Reasoning, ECCBR 2002, Aberdeen, September 2002. Workshop proceedings. Robert Gordon University, pp. 47-59.

Agnar Aamodt  
Modelling the knowledge contents of CBR systems. *Proceedings of the Workshop Program at the Fourth International Conference on Case-Based Reasoning 2001*, (Cristina Weber and Christiane von Wangenheim, eds). Vancouver, Canada, July 2001. Navy Center for Applied Research in Artificial Intelligence, Technical Note AIC-01-003. Washington DC.

Paal Skalle, Jostein Sveen, Agnar Aamodt  
Improved efficiency of oil well drilling through case-based reasoning. *Proceedings of PRICAI 2000, The Sixth Pacific Rim International Conference on Artificial Intelligence*, Melbourne August-September 2000. Lecture Notes in Artificial Intelligence, Springer Verlag, 2000. pp 713-723.

**1995 – 1999**

Ketil Bø, Agnar Aamodt

A new approach to applicable memory-based reasoning. *Journal of Experimental and Theoretical Artificial Intelligence*, Vol. 11, 1999. pp 479-496.

Helge Langseth, Agnar Aamodt, Ole Martin Winnem

Learning retrieval knowledge from data. In *Sixteenth International Joint Conference on Artificial Intelligence, Workshop ML-5, Automating the Construction of Case-Based Reasoners*. Stockholm 1999. Sarabjot Singh Anand, Agnar Aamodt, David W. Aha (eds.). pp. 77-82.

Frode Sørmo, Agnar Aamodt

Knowledge elaboration for improved CBR. In *Sixteenth International Joint Conference on Artificial Intelligence, Workshop ML-5, Automating the Construction of Case-Based Reasoners*. Stockholm 1999. Sarabjot Singh Anand, Agnar Aamodt, David W. Aha (eds.). pp. 39-43.

Agnar Aamodt, Helge Langseth

Integrating Bayesian Networks into Knowledge-Intensive CBR. In *American Association for Artificial Intelligence, Case-based reasoning integrations; Papers from the AAAI workshop*. David Aha, Jody J. Daniels (eds.). Technical Report WS-98-15. AAAI Press, Menlo Park, 1998. ISBN 1-57735-068-5. pp 1-6.

Pinar Öztürk, Agnar Aamodt

A context model for knowledge-intensive case-based reasoning. *International Journal of Human Computer Studies*. Vol. 48, 1998. Academic Press. pp 331-355.

Pål Skalle, Agnar Aamodt

Case-based reasoning – a method for gaining experience and giving advise on how to avoid and how to free stuck drill strings. Proceedings of IADC Middle East Drilling Conference, Dubai, Nov. 1998.

Agnar Aamodt, Helge A. Sandtorv, Ole M. Winnem

Combining Case Based Reasoning and Data Mining - A way of revealing and reusing RAMS experience. In Lydersen, Hansen, Sandtorv (eds.), *Safety and Reliability; Proceedings of ESREL '98, Trondheim, June 16-19, 1998*. Balkema, Rotterdam, 1998. ISBN 90-5410-966-1. pp 1345-1351.

Pinar Öztürk, Agnar Aamodt

Towards a model of context for case-based diagnostic problem solving. In *Context-97; Proceedings of the interdisciplinary conference on modelling and using context*. Rio de Janeiro, February 1997. pp 198-208.

Morten Grimnes, Agnar Aamodt

A two layer case-based reasoning architecture for medical image understanding. In Smith, I., Faltings, B. (eds.). *Advances in case-based reasoning*, (Proceedings EWCBR-96), Springer Verlag, Lecture Notes in Artificial Intelligence 1168, 1996. pp 164-178.

Klaus-Dieter Althoff, Agnar Aamodt

Relating case-based problem solving and learning methods to task and domain characteristics; towards an analytic framework. *AI Communications - The European Journal of Artificial Intelligence*, 9 (3) 1996, pp 109-116.

[Klaus-Dieter Althoff, Agnar Aamodt

Zur Analyse fallbasierter Problemlöse- und Lernmethode in Abhängigkeit von Charakteristika gegebener Aufgabenstellungen und Anwendungsdomänen. *Künstliche Intelligenz (KI)*, nr. 1 (März) 1966, pp 10-15. (German version of above paper)]

Agnar Aamodt

Knowledge Acquisition and Learning from Experience - The Role of Case-Specific Knowledge, In Gheorge Tecuci and Yves Kodratoff (eds.): *Machine learning and knowledge acquisition; Integrated approaches*, Academic Press, 1995, Chapter 8, pp 197-245.

Agnar Aamodt, Mads Nygård

Different roles and mutual dependencies of data, information, and knowledge - an AI perspective on their integration. *Data and Knowledge Engineering* 16 (1995), pp 191-222.

### **Pre 1995**

Agnar Aamodt , Enric Plaza

Case-Based Reasoning: Foundational issues, current state, and future trends, *AI Communications*, March 1994, pp 1-21.

Agnar Aamodt

A knowledge representation system for integration of general and case-specific knowledge. In *Proceedings from IEEE ICTAI-94, Sixth International Conference on Tools with Artificial Intelligence*. New Orleans, November 5-12, 1994, pp 836-839.

Agnar Aamodt

Explanation-driven case-based reasoning, In S. Wess, K. Althoff, M. Richter (eds.): *Topics in Case-based reasoning*. Selected and revised papers from EWCBR-93: First European Workshop on Case-Based Reasoning. Otzenhausen, November 1-5 1993. University of Kaiserslautern, SR-93-12. Kaiserslautern, Germany, 1993. Springer Verlag, 1994, pp 274-288.

Mads Nygård, Agnar Aamodt

Road transport Informatics; Conceptual framework and technological components. In: *VNIS '93, 4th International Conference on Vehicle Navigation and Information Systems*. Ottawa, Canada, October 12-15 1993.

Agnar Aamodt

A case-based answer to some problems of knowledge-based systems. In E. Sandewal and C.G. Jansson (eds.): *Scandinavian Conference on Artificial Intelligence 1993*. IOS Press, 1993. pp. 168-182.

Enric Plaza, Agnar Aamodt, Ashwin Ram, Walter van de Velde, Maarten van Someren  
Integrated learning architectures. In: *Machine Learning: ECML-93*, European Conference on  
Machine Learning, Vienna, Austria, April 5-7 1993. Springer Verlag, 1993. pp 429-441.

Ingeborg Sølvberg, Inge Nordbø, Agnar Aamodt  
Knowledge-Based Information Retrieval. *Future Generation Computer Systems*, 7(1991/92)  
379-390. 1992.

Geir Aakvik, Agnar Aamodt, Inge Nordbø  
A knowledge Representation Framework Supporting Knowledge Modelling. *Proceedings  
EKAW-91*, Fifth European Knowledge Acquisition for Knowledge-based Systems Workshop,  
Crieff, Scotland, June 1991.

Agnar Aamodt  
Problem Solving and Learning from Experience; An Introduction to Case-Based Reasoning.  
*NAIM - Nordic AI Magazine*, Volume 6, no. 1, 1991. pp 19-25.

Agnar Aamodt  
Knowledge-intensive case-based reasoning and learning. *Proceedings of ECAI-90*, Ninth  
European Conference on Artificial Intelligence, Stockholm, August 1990. pp. 1-6.

Agnar Aamodt  
A computational model of knowledge-intensive problem solving and learning. In: Bob Wielinga,  
et al. (eds.): *Current trends in knowledge acquisition*. IOS Press, Amsterdam, June 1990. pp. 1-  
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Agnar Aamodt  
Towards robust expert systems that learn from experience - An architectural framework.  
*Proceedings EKAW-89*, Third European Knowledge Acquisition for Knowledge-based Systems  
Workshop, Paris, July 1989. pp. 311-326.

Agnar Aamodt  
Towards expert systems that learn from experience. *Proceedings Case-Based Reasoning  
Workshop*, Pensacola Beach, Florida, May 31-June 2, 1989. pp. 181-187.

Agnar Aamodt, Jorun Eggen, A. MacDonald, S. Johnsen  
Modelling sedimentological expertise: the FACEXP project. In: D. Sririam, R.A. Adey (eds.):  
*Knowledge Based Systems for engineering, classification and control*. Computational Mechanics  
Publications, 1987. pp. 397-413.

Agnar Aamodt  
Ekspertsystemer og kunnskapsakkvisisjon. NordData 85. København 17-19 Juni 1985. Bind3, s.  
23-28. Dansk Databehandlingsforening, 1985.

Agnar Aamodt

Circulation within a library network. Interarc Software Subgroup Seminar 6. Oslo June 6-11, 1982. pp. 41-56. Universitetsbiblioteket i Oslo, 1982.

### **Patents**

Agnar Aamodt, Pål Skalle, Odd Erik Gundersen, Frode Sørmo: A method and system for monitoring a drilling operation. Reg. 2009-03-16. US Patent no.: US20100235101.

Agnar Aamodt, Pål Skalle, Odd Erik Gundersen, Frode Sørmo: A method and system for monitoring a drilling operation. GB Patent no.: GB GB2460556

Agnar Aamodt, Pål Skalle, Odd Erik Gundersen, Frode Sørmo: A method and system for monitoring a drilling operation (Procede et systeme de surveillance d'une operation de forage). Reg. 2009-03-16. Canadian Intellectual Property Office, Patent number 2755384.

## **Books and Edited Proceedings**

Shi, Zhongzhi; Vadera, Sunil; Aamodt, Agnar; Leake, David.  
Intelligent Information Processing V. IFIP Advances in Information and Communication  
Technology(340). Springer 2010 (ISBN 3-642-16326-2) 355 s.

Sarab Singh Anand, Agnar Aamodt, David W. Aha (eds.)  
*Automating the Construction of Case Based Reasoners*. Proceedings of Workshop ML-5 at the  
Sixteenth International Joint Conference on Artificial Intelligence, Stockholm, 1999. IJCAI,  
1999, 82 pgs.

Manuela Veloso, Agnar Aamodt (eds.)  
*Case-based reasoning research and development*, Proceedings of ICCBR-95, First International  
Conference on Case-based Reasoning, Sesimbra, Portugal, October 23-26 1995. (Lecture Notes  
in Artificial Intelligence, Vol. 1010, series eds.: J. G. Carbonell, J. Siekmann). Springer Verlag,  
1995. x+576 pgs.

Agnar Aamodt, Jan Komorowski (eds.)  
*SCAI'95: Fifth Scandinavian Conference on Artificial Intelligence*, Trondheim May 29-31 1995.  
IOS Press, 1995. ix+484 pgs.

Agnar Aamodt  
*A knowledge-intensive, integrated approach to problem solving and  
sustained learning*, Ph.D. (Dr.Ing.) dissertation, University of Trondheim, Norwegian  
Institute of Technology, Department of Computer Science, May 1991. University  
Microfilms PUB 92-08460, 1992.

## **Shorter papers, Posters, Summaries, etc.:**

Kerstin Bach, Tale Prestmo, Agnar Aamodt, Paul Jarle Mork: Diversity of Exercise Plans  
using Evolutionary Inspired Adaptation. Workshop LWDA 2017 (Lernen, Wissen, Daten,  
Analysen), Rostock University, 2017-09-11 - 2017-09-13.

Agnar Aamodt, Enric Plaza: CBR and the upswing of AI. ICCBR 2017, Trondheim. Extended  
abstract of invited talk. Lecture Notes in Computer Science, LNCS, Volume 10339, 2017, 2 pgs.

Kerstin Bach, Tomasz Szymon Szczepanski, Agnar Aamodt; Gundersen, Odd Erik;  
Mork, Paul Jarle: Case representation and similarity assessment in the selfBACK decision  
support system. LWDA 2016, CEUR Workshop Proceedings, ISSN 1613-0073, Volum 1670.  
pp. 153-154.

Tor Gunnar Houeland, Tore Bruland, Agnar Aamodt and Helge Langseth: A hybrid  
metareasoning architecture combining case-based reasoning and Bayesian networks. Accepted  
for publication in Proceedings of The 11th Scandinavian Conference on Artificial Intelligence  
(SCAI 2011), Trondheim, Norway May 24th - 26th, 2011. 2 pgs. IOS Press.



Odd Erik Gundersen, Jon Håvard Loge, Agnar Aamodt, Tomasz Szczepanski: Decision-support for diagnosing depression through case-based reasoning. EAPC Abstract no. 422, Palliative Medicine, Vol. 24, no. 4, 2010. p S138.

Agnar Aamodt: Integrating case-specific experiences with general domain knowledge for intelligent information processing. IFIP/ICIIP 2004, International Conference on Intelligent Information Processing, Beijing, October 21-23, 2004. 12 pgs. Invited talk, unpublished paper (handout).

Waclaw Kusnierczyk, Agnar Aamodt and Astrid Lægreid: Towards Automated Explanation of Gene-Gene Relationships .RECOMB 2004, The Eighth International Conference on Computational Molecular Biology, Poster Presentations, E9, San Diego, March 2004.

Agnar Aamodt: CBR in context: The technology and its impacts , In Case-based reasoning; A new force in advanced systems development, Unicom Seminars, 27 April 1995, pp 9-23.

"A case-based approach to corporate memory", Papers from EURISCO Workshop on Corporate Memory, Toulouse, November, 1994.

Agnar Aamodt, Klaus-Dieter Althoff: Problem solving and sustained learning by experience; Analyzing methods with respect to domain characteristics , in Maarten van Someren (ed), Proceedings from MLnet Workshop on Learning and Problem Solving , Blanes, Spain, 1993.

Agnar Aamodt: Explanation-driven retrieval, reuse, and learning of cases , In M. Richter, S. Wess, K.-D. Althoff, F. Maurer (eds.) EWCBR-93 : First European Workshop on Case-Based Reasoning, Presentations and Posters. Otzenhausen, November 1-5 1993. University of Kaiserslautern, SR-93-12. Kaiserslautern, Germany, 1993. pp 279-284.

Agnar Aamodt: Integrating General Information and Knowledge with Specific Experiences in an Environment for Teaching and Learning Assistance. Franz Schmalhofer, Alan Lesgold, eds.: Expert Systems and Tutoring Systems as Media for Embodying and Sharing Knowledge. Dagstuhl-Seminar-Report, April 1994.

## **Invited Talks and Tutorials**

*This list is not further maintained*

### **Invited Talks at Conferences:**

“CBR and the Upswing of AI”. With Enric Plaza. International Conference on Case-Based Reasoning (ICCBR 2017), Trondheim, June 2017.

“Artificial Intelligence - an NTNU perspective; History, status, and ways ahead”. Technoport Exhibition and Conference, Trondheim, March 2017.

“Combining Statistical Data Analysis with Knowledge-Based Methods for Intelligent Decision Support”. Mining Intelligence and Knowledge Exploration (MIKE 2015), Hyderabad, December 2015.

“Case-based reasoning for advice-giving in a data-intensive environment”. 10th Scandinavian Conference on Artificial Intelligence (SCAI 2008), Stockholm, May 2008.

“Case-based reasoning and intelligent tutoring.” SAIS-SSLS 2005, Swedish AI Society and Swedish Society for Learning Systems. Västerås, Sweden, April 20-22, 2005.

“Integrating case-specific experiences with general domain knowledge for intelligent information processing”. IFIP/ICIIP 2004, International Conference on Intelligent Information Processing, Beijing, October 21-23, 2004.

“The knowledge in a case – a knowledge-intensive perspective”. Invited talk at ECCBR-04, the European Conference on Case-Based Reasoning. Madrid, August 2004.

“Knowledge-intensive case-based reasoning, some challenges and solutions”. Invited talk at the Fourth Conference of the Catalan Association for Artificial Intelligence, Barcelona October 24-26 2001.

“Case-based reasoning: Past History, Current Trends and Future Prospects”. Invited tutorial at ICML-99, The Sixteenth International Conference on Machine Learning, Bled, Slovenia, June, 1999.

“Explanation-driven learning of case-specific knowledge”. Invited talk at ECML-97 (European Conference on Machine Learning), Workshop on Case Representation – Beyond Feature Vectors?, Praha, April 1997. NCARAI Technical Note AIC-97-005, pp 7-8.

"Case-Based Reasoning and Neural Networks - a Fruitful Breed?"

Invited talk at SBRN'96 - IIIrd Brazilian Symposium on Neural Networks, Recife, Brasil, Nov. 96.

"The Case-Based Reasoning Paradigm - Perspective, Technology, and Impacts".

Invited talk at SBIA '96 - XIIIth Brazilian Symposium on Artificial Intelligence, Curitiba, Brasil, Okt. 96.

"Case-based reasoning", Invited tutorial at EWCBR-93, First European Workshop on Case-based Reasoning, Otzenhausen, November 1993.

### **Invited Talks at Institutions, Events:**

“Artificial intelligence for decision support”. Guest talk at Università Piemonte Orientale, February 2018.

“AI through its summers and winters - and ways ahead”. Invited talk at Robert Gordon University, Aberdeen, October 2017.

“The AI summer - and past seasons; a brief history of the development of Artificial Intelligence”. NTNU-Telenor AI-Lab Opening Seminar, March 8<sup>th</sup>, 2017.

“Artificial Intelligence, Machine Learning, and Case-Based Reasoning”. A one day state-of-the-art update at the Norwegian Defence Research Establishment, May 2009.

“How can knowledge-level analysis and ontological engineering help CBR systems development?” Invited talk at Université de Lyon, November 14<sup>th</sup>, 2008.

"Kunnskapsintensiv CBR ved IDI NTNU; pågående forskning og framtidige planer." Invited talk at University of Bergen, December 5<sup>th</sup>, 2005.

“Utilizing specific cases and general models for computer-assisted training”. Invited talk at Université Claude Bernard, Lyon, February 25<sup>th</sup>, 2005.

“Knowledge-intensive case-based reasoning in Creek”. Invited talk at ECCBR 2004, Madrid, September 1<sup>st</sup>, 2004.

“Combining models and cases for decision support in complex domains”. Invited talk at European Commission, IST Internal seminar on advanced technologies state-of-the-art. Brussel, February 7<sup>th</sup>, 2005.

“Machine Learning and Advanced Case-Based Reasoning”. Three-day seminar at University of Bergen, February 5-7, 2004.

“Knowledge representation for integrated case-based and model-based reasoning”. Invited talk at Seminar on Knowledge Representation, NTNU, English Department, October 27<sup>th</sup>, 2003

“Kunnskapsrepresentasjon og modellbasert resonnering i Creek” Invited talk, University of Bergen. Department of Information Science, October 21<sup>st</sup>, 2003.

“Case-based reasoning overview”. Invited seminar series at University of Girona, April-May 2001. Compiled seminar compendium, University of Girona, 2001.

“CreekL – a representation language integrating general and case-specific knowledge.” Invited talk at Ph.D seminar (Graduierertenkolleg), Universität Leipzig, Dec. 12, 1998.

“Integrating CBR and data mining – the Noemie approach”. Invited talk at GMD, St. Augustin, October 1997.

“Integration of case-based reasoning and data mining for reuse of experience.” Invited talk at Ph.D seminar (Graduierertenkolleg), Universität Leipzig, Dec. 15, 1997.

"Case-Based Agents in Hypermedia Networks"

Guest lecture at University of Sao Paulo, Sao Carlos Campus, Computational Intelligence Laboratory, SCE seminar series, Nov. 96.

"Case-based reasoning - overview and example use in medical image interpretation"  
Guest lecture at University of Sao Paulo, Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Nov. 96.

"An introduction to case-based reasoning", A Two-week seminar series at The University of Sao Paulo, Sao Carlos campus, October-November 96.

"Intelligente opplæringsystemer" (in Norwegian). Invited talk at The Norwegian AI Society Annual Meeting, Bergen, mars 96.

"Kunnskapsmodellering og case-baserte metoder for problem løsning og læring" (in Norwegian). Guest lecture at Department of Informatics, Universitetet i Bergen, May 1996.

"Case-based reasoning and learning". A lecture series at "Summer School on Machine Learning and Knowledge Acquisition '94", organized by MLnet - European Network of Excellence in Machine Learning. Dourdan, Frankrike, September 1994.

"Modellering av kunnskap og læring i datamaskiner" (in Norwegian). Invited talk at Statens Bibliotek- og Informasjonshøgskole, Oslo, 28. januar 1994.

"Knowledge modelling and case-based reasoning", Three-day seminar series at Universität Freiburg, November-desember 1993.

"Case-basert resonnering og integrerte arkitekturer for problemløsning og læring" (in Norwegian). Guest lecture at The University of Bergen, Department of Information Science, 15. Oktober 1993.

"Integrating specialized and generalized knowledge for problem solving and learning in weak theory domains". Guest lecture at Universität Kaiserslautern, July 1993.

"Case-driven knowledge acquisition". Seminar series at Universität Freiburg, Institut für Information und Gesellschaft, November, 1994.

## **Research Project Reports**

The selfBACK Consortium: Self management of health and disease and decision support systems based on predictive computer modelling used by the patient him or herself. Deliverables. H2020 EU.3.1, Project ID 689043, 2016-2020.

The EPCRC Consortium: The European Palliative Care Research Collaborative. Final report from EU project EPCRC. LSHC-CT-2006-037777. 2010.

Volve AS: Real Time Drilling Analysis (RTDA). Final Report from the NFR Project “Develop software for real-time drilling analysis”. Verdande Technology, 2008.

The Noemie Consortium (co-author A. Aamodt): “Noemie - Architecture & Specification”. Deliverable Task 2.3+Annex 2.3A, 2.3B, 2.3C. Esprit Project 22312. Noemie Report, 1996.

Inge Nordbø, Pål Skalle, Jostein Sveen, Geir Aakvik, Agnar Aamodt: Reuse of experience in drilling - Phase 1 Report. SINTEF DELAB and NTH, Div. of Petroleum Engineering. STF 40 RA92050 and IPT 12/92/PS/JS. Trondheim 1992.

Agnar Aamodt, Bart Benus, Cuno Duursma, Christine Tomlinson, Ronald Schrooten and Walter Van de Velde: Task Features and their Use in CommonKADS . KADSII Report VUB/014. vi+122 pgs, 1992.

B. Wielinga, A. Aamodt, M. Aben, J. Balder, H. Baltes, C. Bauer, C. Duursma, A. Kott, G. Schreiber, R. Schrooten, and W. Van de Velde. Method and tool specifications for analysis and design. ESPRIT-II Project 5248 KADS-II Deliverable 1.6a, University of Amsterdam, 1992. University of Amsterdam, Social Science Informatics, Roetersstraat 15, NL-1018 WB, Amsterdam, The Netherlands.

Agnar Aamodt, Bert Bredeweg, Joost Breuker, Cuno Duursma, Christiane Lockenhoff, Klas Orsvarn, Jan Top, Andre Valente and Walter Van de Velde: The CommonKADS Library . KADS-II Report VUB/005. xii+155 pgs, 1991.

Walter Van de Velde and Agnar Aamodt: Machine Learning Issues in CommonKADS . KADS-II Report VUB/002, iii+51 pgs, 1991.

Aamodt, A., Aakvik, G., Aben, M., Blythe, J., Doize, M., Major, N., Munoz, P., Nordbo, I., Ramparany, F. (Ed.), Reichgelt, H., Rodriguez, E., Rugg, G., Shadbolt, N., van Someren, M., Terpstra, P., Trimmer, S., and Vestli, M. Functional Specification of KA-Tools and Knowledge Transformers. ESPRIT P2576 ACKnowledge, ACK-CSI-T2.5-DL-001-B. 1990.

M. Van Someren, A. Aamodt, T. Chippington-Derrick, M. Dozie, C. Jullien, D. Needham, W. Post, G. Rugg, P. Terpstra, S. Whitehouse: A clasification of techniques for knowledge acquisition - part 1 and 2. Technical Report ACK UvA-T1.2-DL-004-D, The Acknowledge Consortium, University of Amsterdam. 1990.

## **PhD Student Projects**

### **Main supervisor**

Bjørn Magnus Mathisen, started in 2015, Thesis topic: Data analysis and decision support for fish farming under exposed conditions.

Hoda Nikpour, started in 2015, Thesis topic: Prediction and explanation by combined model-based and case-based reasoning.

Tor Gunnar Houeland, planned completion in 2016. Thesis topic: A component-based introspective architecture for meta-level reasoning.

Jörg Cassens, completed in 2008. Thesis title: Explanation awareness and ambient intelligence as social technologies.

Waclaw Kuznierczyk, completed in 2008. Thesis title: Augmenting bioinformatics research with biomedical ontologies.

Anders Kofod-Petersen, completed in 2007. Thesis title: A case-based approach to realising ambient intelligence among agents.

Frode Sørmo, completed in 2007. Thesis title: Case-based tutoring with concept maps.

Mingyang Gu, completed in 2006. Thesis title: Conversational Case-Based Reasoning for Software Components Reuse.

Pinar Öztürk, completed in 2008. Thesis title: A knowledge-level model of context and context use in diagnostic domains.

Morten J. F. Grimnes, completed in 1998. Thesis title: Image Creek; A Knowledge Level Approach to Case-based Image Interpretation).

# International Scientific Duties and Community Services

## International Journal Boards

- Member of Editorial Board for *International Journal of Collaborative Intelligence* (2015-). Inderscience Enterprises Ltd. (UK).
- Member of Editorial Board for *International Journal of Intelligence Science* (2011-). Scientific Research Publishing (USA).
- Member of Editorial Board for *International Journal of Computational Intelligence and Applications* (1998-). Imperial College Press (UK).
- Member of Advisory Board for journal *Cognitive Science Quarterly* (1998-2003). Hermes Science Publications.
- Member of Advisory Board for journal *AI Communications*. (1994-2000). IOS Press.

## International Conference and Workshop Chairs

- Co-chair (Program Committee) for IFIP IIP2016 - 9th International Conference on Intelligent Information Processing, November 18-21, 2016, Melbourne, Australia.
- Co-Chair (Conference) for IFIP IIP 2012, "The 7th International Conference on Intelligent Information Processing", Guilin, China, October 12-15 2012.
- Co-Chair (Program Committee) for IFP IIP 2010, "The 6th International Conference on Intelligent Information Processing", Manchester, UK, October 13-16 2010.
- Co-Chair (Program Committee) for ICIIP 2004, International Conference on Intelligent Information Processing. Beijing, October 21-23, 2004.
- Chair (Conference) for ICCBR-03, Fifth International Conference on Case-based Reasoning. Trondheim June 23-26, 2003.
- Co-Chair of CBR-AST, ICCBR-01 Workshop on Case-Based Reasoning Authoring Support Tools, Vancouver, July, 2001.
- Co-Chair for IJCAI-99, Workshop on Automating the Construction of Case-Based Reasoners, Stockholm, August 1999.
- Co-Chair for AAAI-98, Workshop on CBR Integration, Madison, WS, July 1998.
- Co-Chair (Program Committee) for ICCBR-95, First International Conference on Case-Based Reasoning, October 1995.
- Co-chair (Conference) for SCAI-95, Scandinavian Conference on Artificial Intelligence, May 1995.

### **International Conference and Workshop Boards (PC member, Advisory member)**

- ICCBR 2018, The 26th International Conference on Case Based Reasoning, Stockholm, Sweden, July 9-12, 2018.
- AIH 2018, Joint Workshop on AI in Health. In conjunction with IJCAI-18, ECAI-18. Stockholm, July 13th 2018.
- The Third Workshop on Synergies between CBR and Machine Learning, ICCBR 2018 Workshop, Stockholm, Sweden, July 10<sup>th</sup>, 2018.
- RATIC 2018, Workshop on Reasoning about Time in CBR, ICCBR 2018 Workshop, Stockholm, Sweden, July 10<sup>th</sup>, 2018.
- MIKE 2017, 5<sup>th</sup> International Conference on Mining Intelligence and Knowledge Exploration, Hyderabad, December 13-15, 2014.
- ICCBR 2017, The 25th International Conference on Case Based Reasoning, Trondheim, Norway, June 26-28, 2017.
- MIKE 2016, 4<sup>th</sup> International Conference on Mining Intelligence and Knowledge Exploration, Mexico City, November 13-19, 2016.
- ICCBR 2016, The 24th International Conference on Case Based Reasoning, Atlanta, USA, October 31<sup>st</sup> – November 2<sup>nd</sup>, 2016.
- ICCBR 2015, The 23rd International Conference on Case Based Reasoning, Frankfurt am Main, 28-30 September 2015.
- MIKE 2014, 2nd International Conference on Mining Intelligence and Knowledge Exploration, Cork, October 17-20, 2014.
- IIP 2014, The 8th International Conference on Intelligent Information Processing", Hangzhou, China, October 12-15, 2014.
- ICCBR 2014, The 22nd International Conference on Case Based Reasoning, Cork, Ireland, 29 Sept – 01 Oct. 2014.
- MIKE 2013, First International Conference on Mining Intelligence and Knowledge Exploration, Tail Nadu, India, December 18-20 2013.
- SCAI 2013, The 12<sup>th</sup> Scandinavian AI Conference, Aalborg, Denmark, 20-22 November 2013.
- IJCAI-WIS 2013, International Joint Conference on Artificial Intelligence, Workshop on Intelligence Science, Beijing, China, August 2-4 2013.
- MLDM 2012, The 8th International Conference on Machine Learning and Data Mining, Berlin, July 13-20.



- ECAI 2012, The 20th European Conference on Artificial Intelligence, Montpellier, France, August 27-31.
- ICCBR 2012, The 20th International Conference on Case Based Reasoning, Greenwich, London, 12-15 September 2011.
- IJCAI 2011, 22nd International Joint Conference on Artificial Intelligence", Barcelona, Spain, 16th-22nd July 2011.
- ICCBR 2011, The 19th International Conference on Case Based Reasoning, Greenwich, London, 12-15 September 2011.
- HAIS'11, 6th International Conference on Hybrid Artificial Intelligence Systems, Wroclaw, Poland, May 23-25, 2011.
- MLDM 2011, 7th International Conference on Machine Learning and Data Mining, New York/USA, August 30-September 3, 2011.
- SCAI 2011, 11th Scandinavian Conference on Artificial Intelligence, Trondheim, Norway, May 24th - 26th 2011.
- CONTEX'11, 7th International and Interdisciplinary Conference on Modeling and Using Context 2011.
- ExaCt 2011, Workshop on Explanation-aware Computing, at IJCAI 2011.
- ICCBR 2010, The 18th International Conference on Case-Based Reasoning, Alessandria, Italy, July 19-22 2010.
- HAIS'10, 5th International Conference on Hybrid Artificial Intelligence Systems, San Sebastian, Spain, June 23-25 2010.
- AIA 2010, The Tenth IASTED International Conference on Artificial Intelligence and Applications, Innsbruck, Austria, February 15 – 17, 2010.
- MLDM 2009, International Conference on Machine Learning and Data Mining, Leipzig, Germany, July 23-25 2009.
- ICCBR 2009, The 8th European Conference on Case-Based Reasoning, Seattle, USA, July 20-23 2009.
- HAIS'09, 4th International Conference on Hybrid Artificial Intelligence Systems, June 10-12 2009
- ETF A 2009, 14<sup>th</sup> IEEE International Conference on Emerging Technologies and Factory Automation, Palma, Mallorca, Spain, September 22-26 2009.
- MLDM 2009, International Conference on Machine Learning and Data Mining, Leipzig, Germany, July 23-25 2009.

- ICCBR 2009, The 8th European Conference on Case-Based Reasoning, Seattle, USA, July 20-23 2009.
- HAIS'09, The 4th International Conference on Hybrid Artificial Intelligence Systems, Salamanca, Spain, June 10-12 2009.
- ECCBR 2008, The 9th European Conference on Case-Based Reasoning, Trier, Germany, September 1-4 2008.
- IIP 2008, The 5th International Conference on Intelligent Information Processing, Beijing, China, October 19-22, 2008.
- MLDM 2007, International Conference on Machine Learning and Data Mining MLDM'2007, Leipzig, July 4-6, 2007.
- AIA 2007, International Conference on Artificial Intelligence and Applications, Innsbruck February 12-14, 2007.
- ECCBR 2006, The 8th European Conference on Case-Based Reasoning, Ölüdeniz/Fethiye, Turkey, September 4-7 2006.
- CBR in Health Sciences Workshop, at ECCBR 2006, Ölüdeniz/Fethiye, Turkey, September 5th 2006.
- ECAI Workshop on Experiential Reasoning, August 29th, 2006, Riva Del Garda, Italy.
- IFIP AI 2006. IFIP TC12 and WG12.5 Conference on Artificial Intelligence, Santiago Chile, August, 21-24, 2006.
- MRC 2006, Third International Workshop on Modeling and Retrieval of Context, Boston, July 16th-17th. Co-located with AAAI 2006.
- ICDM 2006 Workshop on Data Mining in Life Sciences, July 13, 2006, Leipzig, Germany.
- ECML/PKDD 2005, 16th European Conference on Machine Learning / 9th European Conference on Principles and Practise of Knowledge Discovery in Databases, Porto, Oct 3-7 , 2005.
- ICCBR 2005, The Sixth International Conference on Case-Based Reasoning, Chicago, August 23<sup>rd</sup> - 26<sup>th</sup> , 2005.
- ICCBR 2005 Workshop on Case-Based Reasoning in the Health Sciences, Chicago, August 24th, 2005.
- IJCAI 2005, Nineteenth International Joint Conference on Artificial Intelligence, Edinburgh, Scotland, July 30<sup>th</sup> – August 5<sup>th</sup>, 2005.
- *MRC 2005*, Second International Workshop on Modeling and Retrieval of Context, July 31st - August 1st, 2005. Co-located with IJCAI 2005.

- CONTEXT'05, Fifth International and Interdisciplinary Conference on Modeling and Using Context, Paris, France, July 5-8, 2005
- ICCIMA-05 International Conference of Computational Intelligence and Multimedia Applications, University of Nevada, Las Vegas August 16 - 18, 2005.
- ECML/PKDD 2005, 16<sup>th</sup> European Conference on Machine Learning / 9<sup>th</sup> European Conference on Principles and Practise of Knowledge Discovery in Databases, Porto, Oct 3-7 , 2005.
- MLDM 2005, Machine Learning and Data Mining in Pattern Recognition, Leipzig, July 9-11, 2005.
- IASTED–AIA 2005, International Conference on Artificial Intelligence and Applications, Innsbruck February 14-16, 2005.
- KELSI'2004, European Science Foundation COST282 Symposium on Knowledge Exploratrion in Life Science Informatics, Milano, November 25-26.
- ECCBR 2004, 7th European Conference on Case Based Reasoning, Madrid, Spain, August 30-September 2, 2004.
- ECCBR 2004 Workshop on Explanation in CBR, Madrid, Spain, August 31<sup>st</sup>, 2004.
- ECCBR 2004 Workshop on CBRin Health Science, Madrid, Spain, August 31<sup>st</sup>, 2004.
- AIAI 2004, Firts IFIP Conference on Artificial Intelligence Applications and Innovations, Toulouse, France, August 22-27, 2004.
- IASTED–AIA 2004, International Conference on Artificial Intelligence and Applications, Innsbruck February 16-18, 2004.
- MLDM2003, Machine Learning and Data Mining in Pattern Recognition, Leipzig, July 5-7, 2003.
- ICCBR-03, Fifth International Conference on Case-based Reasoning. Trondheim June 23-26, 2003.
- ICCBR-03, Workshop on CBR in Health Sciences. Trondheim June 24, 2003.
- ECCBR-2002, 6th European Conference on Case Based Reasoning, Aberdeen, Scotland, 4 - 7 September 2002
- ECAI-2002, the 15th European Conference on Artificial Intelligence, Lyon, July, 2002.
- ICCIMA-01, International Conference on Computational Intelligence and Multimedia Applications, Yokosuka City, Japan, October-November 2001.
- ECML-2001, the 12th European Conference on Machine Learning, Freiburg, September 2001.

- ICCBR-01, International Conference on Case-Based Reasoning, Vancouver, July-August, 2001.
- CIMCA-2001, Intern. Conf.. on Computational Intelligence for Modelling Control and Automation, Las Vegas, July, 2001.
- IAWTIC'2001, International Conference on Intelligent Agents, Web Technology and Internet Commerce. Las Vegas, July 2001.
- EWCBR-2000, European Workshop on Case-Based Reasoning, Trento, September 2000.
- ECAI-2000, European Conference on Artificial Intelligence, Berlin, August 2000.
- ECML-2000, European Conference on Machine Learning, Barcelona, May 2000.
- Context-99, Second International Interdisciplinary Conference on Modelling and using Context, Trento, September 1999.
- ICCIMA-99, International Conference on Computational Intelligence and Multimedia Applications, New Dehli, September 1999..
- IJCAI-99, International Joint Conference on Artificial Intelligence, Stockholm, August 1999.
- ICCBR-99, International Conference on Case-Based Reasoning, Munchen, July 1999.
- ICML-99, International Conference on Machine Learning, Bred, Slovenia, June 1999.
- CIMCA-99, International Conference On Computational Intelligence for Modelling and Control of Automation, Vienna, February 1999.
- EWCBR-98, Third European Conference on Case-Based Reasoning, Dublin, September 1998.
- ECAI-98, 13<sup>th</sup> European Conference on Artificial Intelligence, Brighton, August 1998.
- ECML-98, European Conference on Machine Learning, Chemnitz, April 1998.
- ICCBR-97, Second International Conference on Case-Based Reasoning, Providence, August, 1997.
- EWCBR-96, Third European Workshop on Case-Based Reasoning, Lausanne, November 1996.
- EWCBR-94, Second European Workshop on Case-Based Reasoning, Paris, November 1994.
- ECAI 94 (European Conference on Artificial Intelligence), Workshop on Integration of Knowledge Acquisition and Machine Learning, Amsterdam, August 1994.
- ECML-94 (European Conference on Machine Learning), Workshop on Knowledge Level Models of Machine Learning, Catania, Italy, April 1994.

## **Doctoral Evaluation Committees**

- Member of doctoral committee for Raafat Zarka, Université Claude Bernard Lyon 1, Lyon, France, December 2013.
- Member of doctoral committee for Stella Asiimwe, Robert Gordon University, Aberdeen, UK, 2009.
- Member of doctoral committee for Amélie Cordier, Université Claude Bernard Lyon 1, Lyon, France, November 2008.
- Member of doctoral thesis evaluation committee for Mohamed Abdul Karim Sadiq, Indian Institute of Technology, Madras, June 2004.
- Member of doctoral committee for Fransisco Martin, Universidad Polytechnica de Catalonia, June 2004.
- Member of doctoral committee for Fredrik Dahl, Department of Informatics, University of Oslo, June 2001.
- Member of doctoral committee for David Patterson, Faculty of Informatics, University of Ulster, May 2001.
- Member of doctoral committee for Alexander Øhrn, NTNU, Institutt for datateknikk og informasjonsvitenskap, February 2000.
- Member of doctoral committee for Charlotte Skourup, NTNU, Institutt for reguleringsteknikk, January 2000.
- Member of habilitation committee for Dr. Alain Mille, Université Lyon, November 1998.
- Member of doctoral committee for Werner Dubitzky, University of Ulster at Jordantown, Belfast, January 1998.
- Member of doctoral committee for Barry Ellingsen, Inst. f. informasjonsvitenskap, Universitetet i Bergen., november 1997.
- Member of habilitation committee for Dr. Klaus D. Althoff, Universität Kaiserslautern. November 1997.
- Member of doctoral committee for Beatrice Fuchs, Université Lyon, October 1997.
- Member of doctoral committee for Jörg Walter Schaaf, Universität Kaiserslautern and GMD, October 1997.
- Member of doctoral committee for Joseph Luis Arcos, Universidad Polytechnica de Catalonia, September 1997.
- Member of doctoral committee for Klas Orsvärn, Stockholms Universitet, Institutionen för datavetenskap, April 1996.

- Member of Dr. doctoral committee at NTNU, Department of Petroleum Engineering and Applied Geophysics, February 1996.
- Member of doctoral committee for David Macchion, Université Paul Sabatier de Toulouse, 5. desember 1994.

### **Professorial Evaluation Committees**

- Member of competence evaluation committee for Full Professor at Mälardalen University College, 2016.
- Member of competence evaluation committee for Full Professor at Georgia University of Technology, 2008.
- Member of competence evaluation committee for Professor (“Dosent”) at Bergen University College University, 2008.
- Member of competence evaluation committee for Associate Professor at the University of Washington, Tacoma, USA., 2008.
- Chairman of the Norwegian Committee for Promotion to Professor in Informatics based on Personal Competence, 2002-2010.
- Member of evaluation committee for Full Professor at Stockholm University, 2002.
- Member of competence evaluation committee for Full Professor at Stockholm University, 2001.
- Member of competence evaluation committee for Associate Professor at Stockholm University, 2000.
- Member of competence evaluation committee for Associate Professor at University of Bergen, 1999.
- Member of competence evaluation committee for Associate Professor at Carnegie Melon University, Pittsburgh, USA., 1996.
- Member of competence evaluation committee for Full Professor at George Mason University, 1996.
- Member of competence evaluation committee for Associate Professor at Georgia University of Technology, 1995.

### **International Organization Boards**

- National representative for Norway in IFIP – International Federation for Information Processing – Technical Committee 12 on Artificial Intelligence. 2002-2018.

- Vice Chair of IFIP Technical Committee 12, Working Group 12.1 Machine Learning and Data Mining. 2005-2017.

### **International Project Review Committees**

- EU-CEC Reviewer of project BISON, Proj. Ref.: 211898, 7th Framework, (2009-2011).
- EU-CEC Evaluator for applications under the 7<sup>th</sup> Framework Program (2007-).
- EU-CEC Reviewer for project AMIRA, IST-2003-511740 (2004-2006).
- EU-CEC Evaluator for applications within Future and Emerging Technologies under 6<sup>th</sup> Framework Program (2003-).
- EU-CEC Reviewer for project MONET 2 Network of Excellence on Model-based and Qualitative Reasoning, 5<sup>th</sup> Framework Program (2001-2004).
- EU-CEC Reviewer for project RIMSAT, IST- 2000-28655, 5<sup>th</sup> Framework Program (2001-2004).
- EU-CEC Evaluator for applications within Future and Emerging Technologies under 5<sup>th</sup> Framework Program (2000-2002).
- EU-CEC Evaluator for applications within Information Technology under 4<sup>th</sup> Framework Program (1998).
- EU-CEC Reviewer of Esprit-project HELPMATE (1998-2000).
- EU-CEC Reviewer of Esprit-project P 20824 APPLICUS (1996-1997).
- EU-CEC Reviewer of Esprit-project P6322 INRECA (1994-96).
- Member of EU-CEC Working Group on Emerging Software Technologies, for i EUs 4<sup>th</sup> Framework Programme, Jan-Apr 1994.

Trondheim, May 2018  
Agnar Aamodt